

CLMPTO

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TRH

1. **(Currently Amended)** A preform with a hollow tubular or approximately tubular shape for obtaining, after deformation, a personalized orthodontic or dentofacial orthopedic apparatus that can be expanded inside a mold reproducing the morphology of a subject,

wherein said preform has a variable thickness and is being cut on an upper anterior part thereof to form an opening, leaving a closed upper posterior part while a lower part or slide is adapted to substantially match a lower maxilla of the subject.

2. **(Canceled)**

3. **(Canceled)**

4. **(Previously Presented)** The preform according to claim 1, comprising a thermoplastic or thermosetting plastic material which is deformable through expansion.

5. **(Previously Presented)** The preform according to claim 4, comprising a thermoplastic material selected from the group consisting of polyethylene, polypropylene, polycarbonate, methyl polymethacrylate, PVC, and polyurethane, or a thermosetting plastic material selected from the group consisting of methyl polymethacrylate and polyurethane.

6. **(Previously Presented)** The preform according to claim 1, characterized by a surface with guides comprising bumps or recesses intended to guide a technician during cutting operations and/or initial holes for holding fastening hooks of the dentofacial apparatus.

7. **(Previously Presented)** The preform according to claim 1, comprising a flat, developed shape prior to shaping by a technician.

8. **(Previously presented)** The preform according to claim 1 for obtaining after deformation, a Bonnet's Nighttime Lingual Envelope (N.L.E.), that can be expanded inside a mold reproducing the morphology of a subject, wherein said preform has a hollow shape that is cut on the upper anterior part in order to form an opening, wherein said preform has an area corresponding to the palate and to an area to the lower part or side of the N.L.E.

9. **(Previously Presented)** A process for manufacturing a personalized orthodontic or dento-facial orthopedic apparatus, comprising:

a) providing a female mold based at least in part on study models created by a practitioner from a casting or castings made from a subject,

b) positioning a preform of claim 1 in the female mold,

c) expanding the preform to obtain the apparatus having a desired shape,  
and

d) removing the apparatus from the mold and finishing the apparatus.

10. (Previously Presented) The process according to claim 9, wherein the expanding step of c) is preformed with heat and the preform is brought to a deformation temperature of its constitutive material prior to expansion.

11. (Previously Presented) The process according to claim 10, wherein an expansion temperature is attained by radiation or a heat bearing fluid.

12. (Previously Presented) The process according to claim 11, wherein the radiation is microwave, ultraviolet or infrared.

13. (Previously Presented) The process according to claim 9, wherein the expanding step of c) is performed by a method for obtaining an expansion of the preform to a desired shape.

14. (Previously Presented) The process according to claim 13, comprising expanding by an expansion fluid or mechanically.

15. (Previously Presented) The process according to claim 14, wherein the expansion fluid is compressed air or water.

16. **(Previously Presented)** The process according to claim 9, wherein the expanding step of c) occurs by inserting an expansion core in the preform and inflating the expansion core with an expansion fluid.

17. **(Previously Presented)** The process according to claim 16, wherein the expansion core is a controlled expansion core.

18. **(Previously Presented)** The process according to claim 16, wherein the expansion core comprises a material resistant to an expansion temperature.

19. **(Previously Presented)** The process according to claim 9, wherein the preform is made of thermosetting material and the expanding step of c) is simultaneously or later accompanied by a step for polymerization of the thermosetting material.

20. **(Previously Presented)** The process according to claim 9, further comprising inserting fastening pieces or additional pieces during the expanding step of c).

21. **(Previously Presented)** The process according to claim 9, wherein the finishing step of d) includes at least one of preparing one or more openings, polishing,

anchoring of fastening hooks, setting of additional pieces, elimination of useless parts, or reduction of surface areas.

22. (Previously Presented) The process according to claim 21, wherein the finishing step of d) comprises anchoring the fastening hooks to moveable anchoring points on the apparatus.

23. (Previously Presented) The process according to claim 9, wherein the dento-facial orthopedic or orthodontic apparatus obtained by the process of a preceding cycle, is used as the preform.

24. (Previously Presented) The process according to claim 9, wherein the personalized orthodontic or dento-facial orthopedic apparatus is a Bonnet's Nighttime Lingual Envelope (N.L.E.).

Cancel claims 25-26

27. (Previously Presented) A method of manufacturing a personalized orthodontic or dento-facial orthopedic apparatus, comprising:

- a) providing a female mold based at least in part on study models created by a practitioner from a casting or castings made from a subject,
- b) positioning a preform in the female mold,
- c) expanding the preform with an expansion mechanism so as to obtain an apparatus having a desired shape by displacement of mechanical pieces on the expansion mechanism, and
- d) removing the apparatus from the mold and finishing the apparatus, wherein the preform comprises a three-dimensional hollow body with a form allowing expansion of the preform inside a mold reproducing a morphology of a subject.

28. (Previously Presented) An orthodontic or dento-facial orthopedic apparatus manufactured according to a process comprising :

- a) providing a female mold based at least in part on study models created by a practitioner from a casting or casting made from a subject,
- b) positioning a preform comprising a thermoplastic material in the female mold,
- c) expanding the preform so as to obtain an apparatus having a bent-back segment for inserting the fastening hook, and
- d) removing the apparatus from the mold and finishing the apparatus and comprising one or more fastening hook, wherein a fastening hook is inserted into the bent-back segment of the apparatus.

29. (Canceled)

30. (Canceled)

31. (Canceled)

32. (Previously Presented) The process according to claim 22, wherein the fastening hooks are attached using a fastening mechanism.

33. (Canceled)

34. (Cancelled)

35. (Previously Presented) The process according to claim 18, wherein the material resistant to an expansion temperature is an elastomer.

36. (Cancelled)

37. (Previously Presented) The process according to claim 21 wherein the finishing step of d) comprises anchoring the fastening hooks to an orthodontic or dentofacial orthopedic apparatus by means for supplying electrical heating energy and stable positioning of the fastening hook for anchoring to the apparatus.

38. (Previously Presented) The process according to claim 37 wherein the electrical energy is supplied by a hand-held, portable current generator.

39. (Previously Presented) The process according to claim 37 wherein the stable mechanical positioning is performed with the distal ends of electrical conductors having a clamp shape, and the distal ends are adapted to the diameter of a wire or to a shape of the hook to be inserted.

40. (Previously Presented) The process according to claim 37 wherein the electrical energy is supplied by a gun that mechanically holds a pair of rigid electrical conductors connected by flexible conductors to a fixed generator.

41. (Cancelled).

42. (Cancelled)

Please add claim 43 as follows:

43. (New) The preform according to claim 1, wherein the preform is formed from a biocompatible material.